Project Proposal

Submitted By:

Zahoor Ahmad
2021-ag-7754

Muhammad Abdullah
2021-ag-7779

Submitted To:

Dr. Saqib
Computer Science Department
University of Agriculture, Faisalabad

Project Overview:

Project Title: **AI-Based Personal Doctor App**

Project Introduction:

The AI-Based Personal Doctor App aims to leverage artificial intelligence to create a personalized healthcare assistant that assists users in managing and monitoring their health. By analyzing symptoms, suggesting possible diagnoses, and integrating real-time health monitoring, this project aspires to provide accessible healthcare guidance, especially for individuals in remote areas or those who have limited access to healthcare facilities. Additionally, the app will contribute to the medical research field by anonymizing health data for statistical analysis, helping researchers identify trends and improve health outcomes.

Objectives:

→ To develop an AI-driven health assistant that offers symptom-based diagnostic suggestions and healthcare advice.
→ To integrate with wearable devices for real-time monitoring of vital signs and provide alerts for abnormal readings.
→ To ensure data privacy and security, adhering to healthcare data regulations, for storing and managing user health data.
→ To offer a reliable virtual health companion that can support users in taking proactive steps towards health management.
→ To contribute to medical research by offering anonymized data insights, enabling researchers to leverage historical health trends.

Key Features:

→ **Symptom Checker and Diagnosis:** Allows users to input symptoms and receive probable diagnoses, ranked by relevance.
→ **Medication Suggestions:** Provides information on over-the-counter medications and suggests consulting a doctor when necessary.
→ **Vital Signs Monitoring:** Integrates with wearable health devices to monitor heart rate, blood pressure, oxygen levels, and body temperature.
→ **Anonymized Data Collection for Research:** Collects and anonymizes user health data for researchers, contributing to better disease models and understanding.
→ **Virtual Health Assistant:** A chatbot driven by Generative AI to answer health-related questions, give advice, and suggest health routines.
→ **Emergency Alerts:** Notifies emergency contacts if critical health parameters are detected, enhancing safety in severe health situations.

Expected Outcome:

The AI-Based Personal Doctor App will revolutionize healthcare accessibility by providing users with an intelligent, portable health assistant. Through its AI-driven diagnostic, monitoring, and advisory capabilities, the app will empower users to take proactive steps in managing their health, bridging gaps in healthcare access. Furthermore, the data insights generated will assist in the advancement of medical research, promoting better disease prediction and preventive measures in the long term.

Implementation Plan:

→ **Phase 1**: **Requirement Gathering and Feasibility Analysis**
Conduct extensive research on medical standards, user needs, and feasibility of integrating health monitoring APIs.
→ **Phase 2**: **Design Prototyping and Model Development**
Develop prototypes for the app's user interface, AI models for symptom analysis, and diagnosis suggestions.
→ **Phase 3**: **Integration of Health Monitoring and AI Assistant**
Integrate the app with wearable health devices and incorporate the Generative AI chatbot for user interaction.
→ **Phase 4**: **Data Security Implementation and Anonymized Data Collection**
Set up secure, HIPAA-compliant data storage and ensure data anonymization for research purposes.
→ **Phase 5**: **User Testing and Iterative Refinement**
Perform user testing to gather feedback, iteratively refine features, and improve accuracy.
→ **Phase 6**: **Final Review and Deployment**
Finalize the app, conduct a comprehensive review, and deploy it for user access.

Project Proposal

Submitted By:

Zahoor Ahmad
2021-ag-7754

Muhammad Abdullah
2021-ag-7779

Submitted To:

Dr. Saqib
Computer Science Department
University of Agriculture, Faisalabad

Project Overview:

Project Title: **AI-Based Interior Design**

Project Introduction:

The AI-Based Interior Design project aims to bring innovation to the field of interior decoration by combining artificial intelligence with aesthetic design principles. This tool will enable users, particularly office owners and interior decorators, to visualize different design options, optimize space, and incorporate modern design elements with ease. By utilizing Generative AI, the app will generate design layouts, furniture suggestions, and color palettes based on user input and preferences.

Objectives:

→ To create an AI-powered platform that provides personalized interior design recommendations.
→ To integrate pre-trained models for generating room layout options and furniture arrangements.
→ To allow users to see multiple design simulations and choose the best option for their needs.
→ To leverage LangChain to support interactive dialogue, allowing users to refine their choices iteratively.

Key Features:

→ Room Layout Simulation: Users will be able to see various room layout configurations to optimize their space.
→ Furniture and Décor Suggestions: Based on user input, the AI will suggest furniture styles, placement options, and décor that aligns with modern design trends.
→ 3D Visualization (Optional): If feasible, the platform could include a 3D component for enhanced visual understanding of proposed changes.
→ Generative AI for Design Recommendations: The system will use LangChain to refine design options based on user feedback.

Expected Outcome:

This project will revolutionize the approach to interior design by providing a simple yet powerful AI tool that simplifies decision-making for space optimization and aesthetic coherence. Users will gain confidence in their design choices and visualize final results before implementation.

Implementation Plan:

→ Phase 1: Requirement Gathering and Feasibility Analysis
→ Phase 2: Design Prototyping and AI Model Integration
→ Phase 3: Generative AI and Interactive Feedback Integration
→ Phase 4: User Testing and Iterative Enhancements
→ Phase 5: Final Review and Submission